



Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

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1 CAACCATTCG AGATCAGTGT GTGAGGGAAC TGCCATCATG AGGTCTGACA
51 AGTCAGCTTT GGTATTTCTG CTCCTGCAGC TCTTCTGTGT TGGCTGTGGA
101 TTCTGTGGGA AAGTCCTGGT GTGGCCCTGT GACATGAGCC ATTGGCTTAA
151 TGTC AAGGTC ATTCTAGAAG AGCTCATAGT GAGAGGCCAT GAGGTAACAG
201 TATTGACTCA CTC AAGCCT CTCGTTAATTG ACTACAGGAA GCCTTCTGCA
251 TTGAAATTTG AGGTGGTCCA TATGCCACAG GACAGAACAG AAGAAAATGA
301 AATATTTGTT GACCTAGCTC TGAATGTCTT GCCAGGCTTA TCAACCTGGC
351 AATCAGTTAT AAAATTAAAT GATTTTTTTG TTGAAATAAG AGGAACCTTA
401 AAAATGATGT GTGAGAGCTT TATCTACAAT CAGACGCTTA TGAAGAAGCT
451 ACAGGAAACC AACTACGATG TAATGCTTAT AGACCCTGTG ATTCCCTGTG
501 GAGACCTGAT GGCTGAGTTG CTTGCAGTCC CTTTGTGTCT CACACTTAGA
551 ATTTCTGTAG GAGGCAATAT GGAGCGAAGC TGTGGGAAAC TTCCAGCTCC
601 ACTTTCCTAT GTACCTGTGC CTATGACAGG ACTAACAGAC AGAATGACCT
651 TTCTGGAAAG AGTAAAAAAT TCAATGCTTT CAGTTTTGTT CCACTTCTGG
701 ATTCAGGATT AC GACTATCA TTTTGGGAA GAGTTTTATA GTAAGGCAT
751 AGGAAGGCCC ACTACATTAT GTGAGACTGT GGGAAAAGCT GAGATATGGC
801 TAATACGAAC ATATTGGGAT TTTGAATTC CTCAACCATA CCAACCTAAC
851 TTTGAGTTTG TTTGAGGATT GCCTGTAAA CCTGCCAAAG CTTGCCTAA
901 GGAAATGGAA AATTTTGTCC AGAGTTCAGG GGAAGATGGT ATTGTGGTGT
951 TTTCTCTGGG GTCCTGTTT CAAAATGTTA CAGAAGAAAA GGCTAATATC
1001 ATTGCTTCAG CCCTTGCCCA GATCCACAG AAGGTGTTAT GGAGGTACAA
1051 AGGAAAAAAA CCATCCACAT TAGGAGCCAA TACTCGGCTG TATGATTGGA
1101 TACCCAGAA TGATCTTCTT GGTCATCCCA AAACCAAAGC TTTTATCACT
1151 CATGGTGGAA TGAATGGGAT CTATGAAGCT ATTTACCATG GGGTCCCTAT
1201 GGTGGGAGTT TCCATATTTG GTGATCAGCT TGATAACATA GCTCATATGA
1251 AGGCCAAAGG AGCAGCTGTA GAAATAAACT TCAAACTAT GACAAGCGAA
1301 GATTTACTGA GGGCTTTGAG AACAGTCATT ACCGATTCCCT CTTATAAAGA
1351 GAATGCTATG AGATTATCAA GAATTCACCA TGATCAACCT GTAAAGCCCC
1401 TAGATCGAGC AGTCTTCTGG ATCGAGTTTG TCATGCGCCA CAAAGGAGCC
1451 AAGCACCTGC GATCAGCTGC CCATGACCTC ACCTGGTTCC AGCACTACTC
1501 TATAGATGTG ATTGGGTTCC TGCTGACCTG TGTGGCAACT GCTATATTCT
1551 TGTTACAAA ATGTTTTTTA TTTTCTGTC AAAAATTTAA TAAAACTAGA
1601 AAGATAGAAA AGAGGGAATA GATCTTTCCA AATTCAAGAA AGACCTGATG
1651 GGGTAATCCT GTTAATTCCA GCCACATAGA ATTTGGTGAA AACCTTGCTA
1701 TTTTCATATT ATCTATTCTG TTATTTTATC TTAGCTATAT AGCCTAGAAT
1751 TCCATGATCA TGAGGTTGTG AGTATATCTC ATTCTTTCGT TGCATTTTCC
1801 TAGGTGTGCT TACTCTCTT TCTCACTTTG TGACACAAGG ACATGAATAC
1851 ATCTAAATTT TCCATTTTCT GATATCACTG TTTCCATGAC GTCATTACTT
1901 CTCTAACCTT AAGTGATAGG GTGACCTGCA ATATGCTGAT TCCTGGTGT
1951 TGCACAAACA CATGGATGTA AAGAAGTAAA AAATGTAAAA TTCACAAAAT
2001 TCAGTAAACC ACACAAATCA ATGAAGCATT CTATGACATT AGCTTGTTAT
2051 GAGTAACATA ATGATTTTTT TTTTCAATT TAAATAAGCC CTTCTACATA
2101 CCCAGCATTA CTGATCTCAG ACAATGAATT GCTAAAAATG ACGATAGGGC
2151 ATTACACTCA GAATAGTTTG CTATATTTCC ACATACCTCA TCTAGATGTC
2201 ATAGCTACA TTTCTGCCAT CACTTAACTG ACATTTTTTG TGTGTTCTTG
2251 ATGATAAATA GACAGTTCTT ATTATTGTCC TCAAATAATA AAAGAACTG
2301 AAATTTCTT ACATAGAGAA AATGTCCATA AGATATTCAA GTTAAACAGA
2351 TTATTTTGAG ATAAGTAACC ATTAGAAATA TGTGATTGTA ATTTCTGATT
2401 TTATAAAATT TTAATTGATA GTACACTTGA TTTAAATGTC TATCTTTTAA
2451 AATGATGAAT ACTCATAATT CTTATCTCTA TAATCAAAA TATAATTTAC
2501 TGTAGAAAAA TAAAGAGATG CTTGTTCTGA AAGTAAAAAA AAAAAA
2551 AAAACACTGT CATGCCGTTA CGTAGCGTAT CGTTGACAGC CCACTGTCAT
2601 GCCGTTACGT AGCATATCGT TGACAGCGAC ACTGTCATGC CGTTACGTAG
2651 CGTATCGTTG ACAGCACTGT CATGCGTTAC GAGCGTATCG TTGACAGCAC
2701 TGTCATGCCG TTACGTAGCG TATCGTTGAC AGCAAAACAC TGTCAGCCGT
2751 TACGTAGCG (SEQ ID NO:1)
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FIGURE 1A

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FEATURES:

5'UTR: 1-37
Start Codon: 38
Stop Codon: 1619
3'UTR: 1622

Homologous proteins:

Top 10 BLAST Hits

	Score	E
CRA 147000022596013 /altid=gi 10438148 /def=dbj BAB15179.1 (AK...	931	0.0
CRA 1000682322899 /altid=gi 5802604 /def=gb AAD51732.1 (AF1752...	795	0.0
CRA 335001098690982 /altid=gi 11436851 /def=ref XP_003547.1 UD...	679	0.0
CRA 18000005226060 /altid=gi 5803213 /def=ref NP_006789.1 UDP ...	677	0.0
CRA 18000005155438 /altid=gi 4507821 /def=ref NP_001068.1 UDP ...	676	0.0
CRA 18000005147363 /altid=gi 6175083 /def=sp P06133 UDB4_HUMAN ...	675	0.0
CRA 18000004953169 /altid=gi 484383 /def=pir JN0619 glucuronos...	674	0.0
CRA 18000005148770 /altid=gi 3153832 /def=gb AAC95002.1 (AF064...	674	0.0
CRA 18000004903910 /altid=gi 4507819 /def=ref NP_001067.1 UDP ...	669	0.0
CRA 18000005164461 /altid=gi 3426332 /def=gb AAC32272.1 (AF081...	668	0.0
CRA 1000682327923 /altid=gi 5881246 /def=gb AAD55093.1 AF180322...	668	0.0
CRA 18000005219476 /altid=gi 8134780 /def=sp Q9XT55 UDBJ_MACFA ...	667	0.0

BLAST dbEST hits:

gi 10971169 /dataset=dbest /taxon=96...	383	e-103
gi 11068678 /dataset=dbest /taxon=96...	234	6e-59
gi 679005 /dataset=dbest /taxon=9606 /...	212	2e-52
gi 3173232 /dataset=dbest /taxon=9606 ...	212	2e-52
gi 3134358 /dataset=dbest /taxon=9606 ...	212	2e-52
gi 10298020 /dataset=dbest /taxon=96...	200	8e-49
gi 11974507 /dataset=dbest /taxon=96...	196	1e-47
gi 11973717 /dataset=dbest /taxon=96...	172	2e-40
gi 12673874 /dataset=dbest /taxon=96...	137	1e-29
gi 10887798 /dataset=dbest /taxon=96...	125	4e-26

EXPRESSION INFORMATION FOR MODULATORY USE:

library source:

Expression information from BLAST dbEST hits:

gi|10971169 Kidney-hypernephroma
gi|11068678 HepG2 cell line
gi|679005 Liver
gi|3173232 Kidney
gi|3134358 Kidney
gi|10298020 Hepatocellular carcinoma
gi|11974507 Normal pigmental retinal epithelium
gi|11973717 Normal pigmental retinal epithelium
gi|12673874 Kidney hypernephroma
gi|10887798 Kidney

Expression information from PCR-based tissue screening panels:

Human fetal liver

FIGURE 1B

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1 MRSDKSALVF LLLQLFCVGC GFCGKVLVWP CDMSHWLNVK VILEELIVRG
51 HEVTVLTHSK PSLIDYRKPS ALKFEVVHMP QDRTEENEIF VDLALNVLP
101 LSTWQSVIKL NDFVFEIRGT LKMMCESFIY NQTLMKKLQE TNYDVMLIDP
151 VIPCGDLMAE LLAVPFVLT L RISVGGNMER SCGKLPAPLS YVPVPMGTGLT
201 DRMTFLERVK NSMLSVLHFH WIQDYDYHFW EEFYSKALGR PTTLCETVGK
251 AEIWLIRTYW DFEFPQPYQP NFEFVGGLHC KPAKALPKEM ENFVQSSGED
301 GIVVFSLSL FQNVTEKAN IASALAQIP QKVLWRYK GK KPSTLGANTR
351 LYDWIPQNDL LGHPKTKAFI THGGMNGIYE AIYHGVPMVG VPIFGDQLDN
401 IAHMKAAGAA VEINFKTM TS EDLLRALRTV ITDSSYKENA MRLSRIHHDQ
451 PVKPLDRAVF WIEFVMRHKG AKHLRSAHD LTWFQHYSID VIGFLLTCVA
501 TAIFLFTKCF LFSCQKFNKT RKIEKRE (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 3

1 131-134 NQTL
2 313-316 NVTE
3 518-521 NKTR

[2] PDOC00004 PS00004 CAMP_PHOSPHO_SITE
cAMP- and cGMP-dependent protein kinase phosphorylation site

Number of matches: 2

1 67-70 RKPS
2 340-343 KKPS

[3] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 6

1 3-5 SDK
2 120-122 TLK
3 169-171 TLR
4 200-202 TDR
5 435-437 SYK
6 520-522 TRK

[4] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 9

1 62-65 SLID
2 141-144 TNYD
3 204-207 TFLE
4 243-246 TLCE
5 258-261 TYWD
6 296-299 SSGE
7 297-300 SGED
8 419-422 TSED
9 435-438 SYKE

[5] PDOC00007 PS00007 TYR_PHOSPHO_SITE
Tyrosine kinase phosphorylation site

FIGURE 2A

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Number of matches: 2

1 122-130 KMMCESFIY
2 136-143 KKLQETNY

[6] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 4

1 19-24 GCGFCG
2 276-281 GGLHCK
3 373-378 GGMNGI
4 377-382 GIYEA

[7] PDOC00009 PS00009 AMIDATION
Amidation site

338-341 KGKK

[8] PDOC00359 PS00375 UDPGT
UDP-glycosyltransferases signature

354-397 WIPQNDLLGHPKTKAFITHGGMNGIYEAIYHGVPMVGVPIFGDQ

[9] PDOC00804 PS01047 HMA
Heavy-metal-associated domain

12-41 LLQLFCVGCFCGKVLVWPCDMSHWLNVKV

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	5	25	1.802	Certain
2	157	177	0.765	Putative
3	181	201	0.779	Putative
4	377	397	0.735	Putative
5	491	511	1.931	Certain

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BLAST Alignment to Top Hit:

>CRA|147000022596013 /altid=gi|10438148 /def=dbj|BAB15179.1|
(AK025587) unnamed protein product [Homo sapiens]
/org=Homo sapiens /taxon=9606 /dataset=nraa /length=449
Length = 449

Score = 931 bits (2381), Expect = 0.0
Identities = 448/449 (99%), Positives = 448/449 (99%)

Query: 79 MPQDRTEENEIFVDLALNVLPGSLTWQSVIKLNDFVVEIRGTLKMMCESFIYNQTLMKKL 138
MPQDRTEENEIFVDLALNVLPGSLTWQSVIKLNDFVVEIRGTLKMMCESFIYNQTLMKKL
Sbjct: 1 MPQDRTEENEIFVDLALNVLPGSLTWQSVIKLNDFVVEIRGTLKMMCESFIYNQTLMKKL 60

Query: 139 QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKLPAPLSYVPVPM TG 198
QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKLPAPLSYVPVPM TG
Sbjct: 61 QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKLPAPLSYVPVPM TG 120

Query: 199 LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWE EFYSKALGRPTTLCETVGKAEIWLIRT 258
LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWE EFYSKALGRPTTLCETVGKAEIWLIRT
Sbjct: 121 LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWE EFYSKALGRPTTLCETVGKAEIWLIRT 180

Query: 259 YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSL FQNVTEEK 318
YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSL FQNVTEEK
Sbjct: 181 YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSL FQNVTEEK 240

Query: 319 ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI 378
ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI
Sbjct: 241 ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI 300

Query: 379 YEAIYHGVP MVGVPIFGDQLDNIAHMKAKGA AVEINFKTMTSEDLLRALRTVITDSSYKE 438
YEAIYHGVP MVGVPIFGDQLDNIAHMKAKGA AVEINFKTMTSEDLLRALRTVITDSSYKE
Sbjct: 301 YEAIYHGVP MVGVPIFGDQLDNIAHMKAKGA AVEINFKTMTSEDLLRALRTVITDSSYKE 360

Query: 439 NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSA AHDLTWFQHYSIDVIGFLLTC 498
NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSA AHDLTWFQHYSIDVIGFLL C
Sbjct: 361 NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSA AHDLTWFQHYSIDVIGFLLAC 420

Query: 499 VATAIFLFTKCF LFSCQKFNKTRKIEKRE 527 (residues 79-527 of SEQ ID NO:2)
VATAIFLFTKCF LFSCQKFNKTRKIEKRE
Sbjct: 421 VATAIFLFTKCF LFSCQKFNKTRKIEKRE 449 (SEQ ID NO:4)

>CRA|1000682322899 /altid=gi|5802604 /def=gb|AAD51732.1| (AF175221)
UDP glucuronosyltransferase UGT2A3 [Cavia porcellus]
/org=Cavia porcellus /taxon=10141 /dataset=nraa
/length=530
Length = 530

Score = 795 bits (2030), Expect = 0.0
Identities = 377/530 (71%), Positives = 435/530 (81%), Gaps = 3/530 (0%)

Query: 1 MRSDKSALVFLLLQLFCVCGFCGKVLVWPCDMSHWLNKVL EELIVRGHEVTVLT HSK 60
M K A LLL L C G GFCGKVLVWPC+MSHWLN+K +LEEL+ RGHEVTVLT S
Sbjct: 1 MAPGKLASAVLLLLCCAGSGFCGKVLVWPCEMSHWLNKLTLEELV KRGHEVTVLTLSN 60

Query: 61 PSLIDYRKPSALKFEVVHMPQDRTEENEI---FVDLALNVLPGSLTWQSVIKLNDFVVEI 117
IDY + A FEV+ +P D+ I F++LA+NV+P + WQS L FFV+I
Sbjct: 61 NLFIDYNRHAPNF EVIPVPTDKNMSENILNEFIELAVNVMPTMPLWQSGKLLQQFFVQI 120

FIGURE 2C

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Query: 118 RGTKMMCESFIYNQTLMKKLQETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGN 177
L + C + +YNQ+LMKKL+++ YDV++ DPVIPCGL+AE+L VPFV L+ S+G
Sbjct: 121 TEDLGLNCRNTVYNQSLMKKL RDSKYDVLVTDPVIPCGLVAEMLGVPFVNMLKFSMGHT 180

Query: 178 MERSCGKLPAPLSYVPVPM TGLTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWEEFY SKA 237
+E+ CG+LPAP SYVPVP+ GLT RMTF+ERVKN + SVLF FWIQ YDY FW++FYS+A
Sbjct: 181 IEKYCGQLPAPPSYVPVPLGGLTTRMTFMERVKNMVSVLFD FFWIQDYDYKFWDFYSEA 240

Query: 238 LGRPTTLCETVGKAEIWLIRTYWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSS 297
LGRPTTLC E+GKAEIWLIRTYWDFEFP+PY PNFEFVGGLHCKPAK LPKEME FVQSS
Sbjct: 241 LGRPTTLC EIMGKAEIWLIRTYWDFEFP RPYLPNFEFVGGLHCKPAKPLPKEME EFVQSS 300

Query: 298 GEDGIVVFSLSGLFQNVTEEKANIIASALA QIPQKVLWRYKGKKPSTLGANTRLYDWIPQ 357
GEDG+VVFSLGS+ +N+TEEKAN+IASALA QIPQKVLWRYKGKKP+TLG NTRL+DWIPQ
Sbjct: 301 GEDGVVVFSLGSMVKNL TEEKANLIASALA QIPQKVLWRYKGKKPATLGPNTRLFWDWIPQ 360

Query: 358 NDLLGHPKTKAFITHGGMNGIYEAIYHGVP MVGVPIFGDQLDNIAHMKAKGA AVEINFKT 417
NDLLGHPKTKAFITHGG NGIYEAIYHGVP MVG+PIF DQ DN+A MKAKGA AVE+N T
Sbjct: 361 NDLLGHPKTKAFITHGGSNGIYEAIYHGVP MVGMPIFS DQPDNLAGMKAKGA AVEVNMNT 420

Query: 418 MTSEDLLRALRTVITDSSYKENAMRLSRIHHDQPVKPLDRA VFWIEFVMRHKGAKHLRSA 477
MTS DLL ALRTVI D +YKENAM+LSRIHHDQPVKPLDRA FW+EFVM HKGAKHLR A
Sbjct: 421 MTSADLLGALRTVINDPTYKENAMKLSRIHHDQPVKPLDRA AFWVEFVMHHKGAKHLRVA 480

Query: 478 AHDLTW FQHSIDVIGFLLTCVATAIFLFTK CFLFSCQKF NKTRKIEKRE 527 (residues 1-
527 of SEQ ID NO:2)
AHDL+WFQ++S+DVIGFLL CVA+AI L TKC LFS Q F K K K+E
Sbjct: 481 AHDLSWFQYHSLDVIGFLLACVASA ILLVTKCCLFSFQNF IKGKRIKKE 530 (SEQ ID NO:5)

Hmmer search results (Pfam):

Model	Description	Score	E-value	N
PF00201	UDP-glucoronosyl and UDP-glucosyl transferas	962.0	1.5e-285	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00201	1/1	24	525	..	1 507 []	962.0	1.5e-285

FIGURE 2D

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1	TTCTAGAGGG	TTGGAACAAC	TTTTCCTGA	TACATTGCAT	TTTTTTGATA
51	CCTTCAGTAC	ATGTTAAACT	GGCAACCACC	AGTGAACCTT	ACTCTTAAAA
101	TATTAATTTT	TAACCTCTGT	GCTTATATTG	TCATTTCAAC	TCCTTGCTTA
151	GTAAC TACAA	AACCATTGCA	GATCAGTGTG	TGAGGGAAC	GCCATCATGA
201	GGTCTGACAA	AATCAGCTTG	GTATTTCTGC	TCCTGCAGCT	CTTCTGTGTT
251	GGCTGTGGAT	TCTGTGGGAA	AGTCCTGGTG	TGGCCCTGTG	ACATGAGCCA
301	TTGGCTTAAT	GTCAAGGTCA	TTCTAGAAGA	GCTCATAGTG	AGAGGCCATG
351	AGGTAACAGT	ATTGACTCAC	TCAAAGCCTT	CGTTAATTGA	CTACAGGAAG
401	CCTTCTGCAT	TGAAATTTGA	GGTGGTCCAT	ATGCCACAGG	ACAGAACAGA
451	AGAAATGAA	ATATTTGTTG	ACCTAGCTCT	GAATGTCTTG	CCAGGCTTAT
501	CAACCTGGCA	ATCAGTTATA	AAATTAAATG	ATTTTTTTGT	TGAAATAAGA
551	GGAACTTTAA	AAATGATGTG	TGAGAGCTTT	ATCTACAATC	AGACACTTAT
601	GAAGAAGCTA	CAGGAAACCA	ACTACGATGT	AACGCTTATA	GACCCTGTGA
651	TTCCCCGTGG	AGACCTGATG	GCTGAGTTGC	TTCCAGTCCC	TTTTGTGCTC
701	ACACTTAGAA	CCTTCTTAAG	AGGCAATATG	GAGCGAAGCT	GTGGGAAACT
751	TCCAGCTCCA	CCTTCCTATG	TACCTGTGCC	TATGACAGGA	CTAACAGACA
801	GAATGACCTT	TCTGGAAAGA	GTAAAAAATT	CAATGCTTTC	AGTTTTGTTC
851	CACCTTCTGA	TTCAGGATTA	CGACTATCAT	TTTTGGGAAG	AGTTTTATAG
901	TAAGGCATTA	GGTAAGACAC	TTTTGTTTTA	TTTTTAATTT	AGTTATCAAA
951	AGAAATATTT	TTAAAAATTG	TCATACATTG	TCTATGACAT	ATATATGCAG
1001	GTCAATGAGT	TTTTTTTAGAA	AATGTTGTAG	CTGTTTTTCA	TAAAGAAAGT
1051	GTATTTGTTT	TAAGCGTAAG	ATAACCTACT	TTCTTAATAC	CAGTAATATA
1101	CTTAAAAATG	ATCATCAATA	ACTAAGAGAT	TATATTTTGT	ATTTCTCTCA
1151	AATAGCGCAA	ATCAACATCA	CATATTTTTG	AGAATCACTG	ATTGTTAGTC
1201	TGAAATGTTT	AGAAATTTCTA	TTGAAATAAA	ATGCTAATCA	TTATTTTCTC
1251	TCTCATCATG	TATTTAAGAA	AATCTTCAGA	AGGTCTTCTT	TGAATTAATT
1301	TTTCAAGAGT	CATTAAATTG	AACATTTTCT	AGAATTCTTT	AATTTCTTAG
1351	GTGATTACTT	CACAAAAACT	TGAAAAAATA	TTATAAAAAG	TTAAAAAACT
1401	TACGGTCTTG	TGGGGCATAA	GATAGTAGAA	TTTTTACTTT	ACTGATATAC
1451	ACCTATTTGA	CTTATTTTTA	TTTCTTTGCT	TTACTGATAA	AAAGTTGTTT
1501	TGCTTTGCAA	TTTTCATATA	GTTGTGATCA	GAGCTGGTCA	ATGCAAGACA
1551	TGTTTTTATC	CAATATGTTT	TGAGAATTAT	GTAGAAACAT	GAAAAAAGGT
1601	ACAATTATAT	CCGACACTAA	AATATTGTTT	AATGTATTCC	AACGAATTCT
1651	TATGCATAGA	CTGTTTCACA	GAAC TAATAT	TCAGAGGATC	CCAGTTCAAA
1701	TGTCCTTAGC	CCTAGACATG	ATTGAATTTT	ACATATATTG	ATTTGCTTTA
1751	AATAATTTTC	CATT CAGTAA	GCTGTGCCTA	GCTGCAGATA	GCCTACCAGG
1801	CTTTATGGAT	CTAGGTA AAC	AATACAAATC	TCTTGGCCTC	AAGTCTACAT
1851	TCAGATATTA	ATTTAAAGGG	GTACAGCTAT	ATAGAGGTCA	CTGGCAAATT
1901	TTGGTAAAAAT	AGGATTATAG	TAAAAGCCCC	CTGACAAGAT	TGAAATTTAA
1951	AATAAAAACAA	AAGTGTATATC	AAAGGGGTGA	AAGAGCATTT	TCCAATAAAC
2001	AAAAGTGGGT	TCTGGCCATG	CATTCAGAAA	TTCCCCAACA	ATTCTTTTAA
2051	AATCATGGAG	CAGCTTGATA	TATAAGAAAT	TCATTTAATA	ACTATATTTA
2101	TTATGTAGCT	CCAACCTACT	AAATTATTGA	TTATTATATA	TTTTATAGAA
2151	TTATCTATTG	TGAGTCTAAA	TCAAGAGTAT	ATATTCAAAC	AACTATAGGA
2201	AAAGGGATAT	CAGTCAATTT	CAATTCAAGG	ATTTATTTCC	ATAAGTGCTT
2251	ACGCACAGGT	GTATTTCAAT	TTATTATACA	TTGCTTTATT	GTCCTTCACA
2301	AAAATTGCAA	TTTACAAATT	AAAGGTTTTT	GAAAACCTTG	AATCAAGCTA
2351	ATCAATTTGG	CGTAATATTT	CCAACAACAA	GTGTGTACTT	TTGACTCTAT
2401	CACATATTGG	CATTTATCAT	GCTTTTTCAA	ATTTTTCAAT	GTTATATCTG
2451	TTACGGTGAT	CTGGGATCAG	TGTTCCCTGA	TGGTTACACG	TTTATTAGCT
2501	TGGGGGCACC	TTGATGTGTT	ACAATATAAG	ACAGCAAAC	TAATTATAAA
2551	TGTTGTGCAT	GTACTAACTG	CTCCGCTGAT	TCGTTTCCCC	ATCCCACTTC
2601	TTCTTAGGCC	TCCCTATTCC	CTGAGACACA	GTAATATAAC	ATACAATGAC
2651	TTCTAAATGT	TCCAGTGAAA	AGAAAAGTAG	CAGGTCTCTC	AATTTAAACC
2701	AAAAATATAA	AGGAATAAGT	TTAATGAGTA	CTATAGTTTA	GATATGGTTT
2751	GCTTGACCCT	ACAAAATCCT	GTGTTGAAAT	TTGATCACCA	ATATTGGAGG
2801	TGGGGCTTGA	TGGGAAGTGT	TAGGGTCATG	AGGGTAGATT	CCTTATGAGT
2851	ACATTAATGC	TCCTCCTGGG	GAAATGGGTG	AGTTCGTTCT	CACTCTATTA

FIGURE 3A

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

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2901 GGTCCCAGGA GAGATAATTA TTAAAAAGAG CCAGGAACAT CCACCTTCTT
2951 TCTCTTGCAT ATCTCTCATT ATCTGATCCC TGCACCTTGCT GGCTCCCAAC
3001 ATCTTCTTCA ATGAGTGGAG GAAACCAGAG GTCTTCACCA GACACAGATG
3051 TTGGTGCCAT GCCTCTTGTA TACCTGAAG AATTGTGAGC CAAATAAAAA
3101 CCTTTTTCTT TTACAAATTA GACAGCCTCA GTTATTCTT TGTAGCAACA
3151 AAAAAAGCCT GGGACAGGCC AAAAATAACA CCATTGCACC AAACAGTTAA
3201 ACAAGATGTG AGTGCAAAGG AAAAGTTTTT GGAGGAAATT AAAAGTGCTA
3251 CTCCAGTGTA CATACAAATG ATAAGAACAA ATAACCATTA TCAGTGCTGA
3301 TATGGAGAAA ATTTTAGTTG TCTGGAGAGA AAATCAAATT AGCTAGCCAG
3351 CTGCAGTGAT TCATATCTGT AATCCCAGTA ACTTGGGAGG CTCAGGTGGG
3401 AGAACGGCTT AGCCCCAGAA GTTTGAAGTC CAAGGCTGCA GTGAGCTATG
3451 ATTGCTCCAC TGCACCTCAA CCTAGGTGAT AGAGCAAAAC CACTACCAA
3501 AAAAAAAAAA AAAAAAGAA GAAAAAGAAA AGAAAAAAAAA TTAAACCAAC
3551 CACAACATCA CCTTAGGTTT TGGCATTAGC TAAAAACTAA TACATAGTAA
3601 AGCGTTAACT ATTCAATTGC ATGAAACCTC AGAGAGGAGA GGAAGATGCA
3651 GAAAAAAGA CTGAAGCTAG TAGAGGTGTA CTAATGAGGT TTACAGGAAT
3701 AAATGCCTA CATGATGCAA AAGTTCAATG TGAAGCAATA GGAAGTCATG
3751 CAGAAGACTT AGCTAATATA CTCAGTAAAT GTGGCTACAG TAAACAAATG
3801 ATTTTCAATG TAGACCTAAC AGCCTTCTGT TGAAGAAGA TGCCATTTAA
3851 AACTTTCATA GCTAGAGAAG AGAAGTCAAT GCTTGTCTCT GAAGCTACAA
3901 AAAACAGGCT GAATCTCTTG TAGTGGCTAA TGCAGCTGAT GACAAAGGTA
3951 AAGCCAATGC CCATTTACTT TTTGTAATAA TTATAGAGGA CTCTTAATAA
4001 TTATGTTAAA TCTACTTTCG CTGTGTTATA TCAATGGAAC AACAAAGCCT
4051 GGATGATATC ACATTGGTAT ATGACATGGC TTATTGAATA TTTAAGCAC
4101 ACTGTTGAGA CCTATTGCTC AAAAAAGAGG ATTCCTTTCA AAATATTGCT
4151 GCTCATTGAC AATTCACATG GTCAACAAAG GGCTCTGATT AAGATGTACA
4201 GATATTAATG TTGCGCTGCT TGCTATTATT ACATCCATCT TACATGCCAT
4251 GGATCATATA GCCTTGACTT TCAAGTCTTA TGTAAGAAAT ATATTTTGTA
4301 AGGCTATAGC TCTTACTAAT GGGGAAAGTA TATTGAAAAC CTTTTCAAAA
4351 GGATTTTTC TCTAGATT CATTAGAAC ATTCATGGTT CATGAGAGGA
4401 AGTCAAGATA TTAACATTAA CAAGAGTTTG GAAAAAATTT GATTCTAACT
4451 CTCCTGGATG ATTTTGAGGG ATTGAAGACA TCATGTGAAG AATTAAGTGG
4501 GGATGGGGTG GTCATGAAAA AATAAATAGA ATTATAAGTG GGCCTGAAGG
4551 TTTGTCTAAA TTGCTATAAT ATCATGATAA AACTAAAACC TGTAAAACCG
4601 GTGAGGAGGT GCTTTTTTAA CAGTTACTTT TTATAGATGA ACACAGAAAT
4651 TGGTTTTGTG AGTTGGAATC TTCTCCGAGT GAAAAATGCTA TGAACATTGT
4701 TGAAATGGCT ACAAATGACT TAGAATATTA CACAAAATTA GTAGATAAGG
4751 CAGCATCAAG GTTTGAGAGA ATGGACTCAA ATTTTGAAAG AAATTCTACT
4801 ATGGGTAAAC TGCTGTGAAA CATCATCATA TGCTACAGAG AAATCTTTCA
4851 TGAAAAGATG AGTCAATTCA TGCAACAATC TTTGTTGTCT AATTTTAAAA
4901 ATGTCCAGC TGCCCTGATC AATCAACAGT AATCAGCACT GAGGCAAGAC
4951 CCTACACCAG AAAAAATAAA AATAAAAAAC CTCACTTGCT GAAGACTCAG
5001 CTTATTATTA GCACTTTTTA GCCATACTTT TAACTAAGGT ATGTGCATTG
5051 CTTTTTAAAC GTGATGATAT TGCACAGCTA ATAGCCTACA AGGTATGGTT
5101 AACATAACTT TTATATGTCC TGGGACCCAA ATTTGTGTGA ATCACTTTAT
5151 TGACATATTC CTTTTATTGA GATGAACTGC AACTTATCTT GCAATATCTC
5201 CAAGATATGT GTGATGGCA TTTCAAATAA GATGTGAAAT TATTTTATTA
5251 GTATAAAAAG CAAATTTAAT TTTCTTTTCT TTGATCATCT TTATCCTTGT
5301 TACTGTGTAT TTATCCTTTA AACATTGAAT GACTCCAATT GTTTAAACT
5351 GAGTCTTTCT TAAATGAGTC CTAATATCAT AGTAATTAAA ATCACCTACA
5401 AGTTGGTAAT CAGGCAGCA TGTGAGGCAC AGAAAACAAC AAATTTATAA
5451 GACATAAATG CATTTGCTTG GAAGCTGAGA GAAGGCTCTA TTCTAATTTT
5501 TGATAACTTC AAATGAGTA TCTTCAGTAA AATTTATTCA CTATCAAATT
5551 CAAGGCGTTT GGATTTATGA CCTAGGAAAA AACTTCAAAC ATTAAAATGT
5601 GATGACCTTA AAAAGAGGCT CTCCACACTA TGGTGTATAA CACCACCAAC
5651 TTTGATTAGA ATTTTAAAGA GAAACAAATT CTCTTATGGA GTTTATCTTT
5701 TTATCACTTG CAAATATGT TTTGTAAAG AGATACTAAT TACTTAGTTA
5751 TTTGTAGTTA GCCATTCTTC TGATTAAAAA CCTAAAATTA AATCTTGAAA

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FIGURE 3B

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

```

5801 ATGTGTTTTTCTTCAAAACA CATCATTTGA GAGAAACACT AAAGTAAGTG
5851 TATGATTATC ATAGCATGTA CATAGGTGCT TCACAACCCA AAAAGAATAT
5901 TGTCATGGGT AAGAATCAGT AAAGGAATTT CTCCTAATAA AACAGTAGCC
5951 TATTAATTAA AGTAATGATA TGCAATACAG CAAGTTAAAG GGAAGTATC
6001 CTGGTGGGAT TATTGAAAGA TATACCCTTG ACTATAGATT AGAAAATACA
6051 GAGATGTTAT TTAGTGAAGA TATTGTGGTA CTCATTTATC ATCTGCAATT
6101 CACTTGCAGA GGAAGAAATG AGTAATAAAT TCATTTGCAT TTTGGATTG
6151 TGCTTTAAG TTGTGAAAAT AACTTTAAAT ATAACCATCT GTCCTTTGCT
6201 CCTTCCTTCC TTCCTTCTTT CCTTCCTTCC TTCCTTCTTT CCATCCTTCC
6251 CTCCCTCCAT CCTTCCTTCC TTCCTTCTTT CCTTCCTTCC TTTCTTTCTC
6301 TGTCCCTTCTT TGTCTTTCTT TTTCTTTCTT TTTTCTTCTT TATTATTTCA
6351 TTAATTCCTTCTTCCATTG ACGTCTAAAA GCCATGTTGT TCTAGAGGAC
6401 TTAAACTTAT TTTTCTTTCTT ATAGCTTACT GAAAAATTAG TGATACAATT
6451 TTTTATTTGA ATGTATGCT AATTCATTCT GTTATTTCTT TTATTGAGGA
6501 AGGCCCACTA CATTATGTGA GACTGTGGGA AAAGCTGAGA TATGGCTAAT
6551 ACGAACATAT TGGGATTTTG AATTTCTCTA ACCATACCAA CCTAACTTTG
6601 AGTTTGTGGT AGGATTGCAC TGTAACCTG CCAAAGCTTT GCCTAAGGTA
6651 GGAATATTGT ATTAAGGAAT ATTATGTACT TTATGACATG ACTTGTTTTT
6701 CCTTGAAAGA TTACAACCTT AGTTATAGAA GGATGATGTT GAATGTCGTC
6751 TGTTGTCAGC TCCATATTTA TTTTCCATGC CACAGGGGCT CTTATAGGTG
6801 ATTATATGTC TTTTCGGTAT TATATTGAGA AAGTAGGCAG AAGAATTTCA
6851 TGATTAGAAT AGATTTTAAA ATACTAGTAT TACAATAGTT TGGATAATAA
6901 ATTGAATTAA TAGGGAATTG GAGCCATGAA GATCACTAAA AAGAATGCTC
6951 TAGCCTTTCT CACAATCAAA TTGGGCTTAT GAACAAGGAT ATTTGTCATG
7001 ATAGTACAGA AATAAGCATA TTTTCATGAG ACATATTGGA TATATTCCAC
7051 AGGAGTTGGT GAGTGAGAGA AAATAAGTGA TGAAGGAAGA CAAAGAATAA
7101 AAGAAAATTT CAATAAATGG AAAGTTTAAG TGTTTAAATGA TAGTGATGAC
7151 TTTTACTCAA ATAAGTGCTT AGAAGTCATC TTGTTTGTGA TTTATATGAT
7201 GAATTCGTG TGTGACTAT CCACTTTGAG CTCGTGAGAA TGTTAGGTGA
7251 GGTTTAATAA AAGCCATTG AGAAAAACAA GGTTCACCC TCTGTGGACA
7301 GAAATCTAAA TATCGATAGT TATCAGGACA AAGTAGAGCT CATAGAAATA
7351 ATTTTGCAGC CTGCAGGTTT GTTTTGGAGT GAAAATAAAA TTGTATACTA
7401 TATTCCTAAA TCATCAGAGG AAAAAATTTA TAGTTCAAGG AATGTTGAAA
7451 GAAACAATAT TGAGAAGTAA AAGTGAGTAA TAGTTGTTAT AGTTTTTTTAA
7501 TAGTTTTGTA AGTATGTCTT GAGTTCAC TGCCAAAAGT GGCTATTAGC
7551 TCTAGCCTTG ACCTGACAAG GTTCTAGGAT ATTTAGTCAT GGATGTTTCA
7601 AATCTACCTC TTACGGGATA CTTTTTATTC TGATGAACAG CCTAATGCCT
7651 AAGTGTGCAA TCTATACCAA GATTGTTCTT ATAGGGAAGT TGTTTACACT
7701 GGAAGACACC ACTGTGTCTC TTGTATGACC TATGTCTTCT TTATCCCTAC
7751 AAAGGTAACC ACATTATAGG AAACCCTGAC AAGGCCAGAT GTTATATTTG
7801 TGTTGGTCAA GTGAGAAAAC ATGGGAGAAA CTTAACCAAA CACATAAAAT
7851 AACAGAAACA GTCTTCTTTG ACCATTTC TA GAGAAAAGAG TTCAGCATCC
7901 CTTGTAAGGC CACTAGGAAG AAGAAAATTC TCTGGGAAAA GCACATTCAA
7951 CCAATGAATG GAGACCAAGA AAGAGAGTGA GGGATCTATG TGCCAAAATG
8001 TTAAGTGGGA TCCAGGGTGT TACCTAGGTG GGTTCCTAAT GGGGAAGTGT
8051 AATTGGTAGG TTTAATGCAA GCAGGCACAA AGTCCATGGA GGCATTCTGA
8101 GACTGAAAAG TAGTCACTTT GGCATATCTG CACAGAATCT GATCAGTGAT
8151 TCAAGCCCAA GTAGGCTGTA TCTAGTTGTC CTATAGGGTG GTTACCAGGA
8201 GGCAGTGTGT AAGTAAAAAT CCTGACTGAA CACATTGAGG AAATGGAAGG
8251 AGGTGGAAGA TTTTAAACGG TGTCAGTGTT GACTAAGACC TGCTTCTGGT
8301 ATGGAAAATT CAACCTTATAT TTTAAATGCA TAGCCAGACA ACATAAAAT
8351 ATAAGAATTT ACCACAATAG CTATGGTAAC AATACTGGGT TTACCTATTA
8401 CTACAGAGTG AAAAGAAAAC CCTCATTTC CATTTTATGG AAATATAATC
8451 AAAATCCTAT AAGGAAGGTT TCAGAGCCAG TAGGATTTCC AGAAAAATTA
8501 TTGGTTTTAT AGTAAGATGT GTATTGATGA ATATAATTTT ATTTATTAAT
8551 TATTAATATC ACTTTACTTA CCAGGAAAGT TATACCAGAA AACCAAGCTC
8601 TCTTAAGCCA TGGCATCTGT ATCTAAATA GAAATACAGA AGGAGAGCTG
8651 ACAATTTCCA TCATTCTCTA GGTAATCTCC CATGCCATTC TACCCTTTAT

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FIGURE 3C

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

8701 TCCCACACTC CCAGTTTTAC ACACACACAC AAACACACAC ACACAAACAC
8751 ACACTCATAG AAATAATCAT AGAAGACATA TTTTAAAAA AGTTAGATCC
8801 ATACAGTAAT AATTTATTAG GTAAAAGCTT TTGTGCTGAT AATTTTACAA
8851 GTTAAATTGA GATATATTTT AGGGCTGTCT TACACTAAAT ATTTATTTTT
8901 ATTTTTTAAA TTTGACATGT AATAATTGCA CATGTTTAAAG AGAAATGCTG
8951 TGGTATTACA ATACATTTAA ATGTTGTGTA ATAATTACAT CAAGATAATA
9001 AACCCATCAT CTAAATATTT ATCATTTCTT TGTGGTGATA ACATTCAAAA
9051 ACCTCCTTTC TGGCTATCTT GAAATATGTA ATACATTACT ATTAACATA
9101 GTTACCCAAC AACTTAATAT AATAACAGAA CATATTCTTC CAAATTTAAA
9151 CGTTGTATCC ATTGATCCAC CATTTCTCAT TGCCCTCCCT ACTATCTCTT
9201 CAGCCTCTAG TAACCACAAT TCTACTCTCT AATTATATTA TGAATGCATT
9251 TTTTGATTCC ACATATAAGG GATACCATGC TATCTCTGCC TGGATTATTT
9301 CAGTTAACAT TATGCCCTGG AGGTTTCATC ATGTTTCTAC AAATGACAGG
9351 ATTTCAATTCT TTTTTTTCCA ATATATATTT AATGAAATGG ATATATATAA
9401 ACATTGGAAG ATGTATATAT ATATATATAT CTCCAGTGGA ATGCTATTGA
9451 GCTATAAAAA AGTTAATATA TAATAGAAAT AAAGCTTATA TATATCTAAT
9501 GGAATGGATA TATATATATA ATGGAATAGA AATATATATC TATACATATA
9551 AACACACGCA ATACACATAT CCATTTCAAT GCATATATAT ATATATAGAG
9601 AGAGAGAGAG AGAGATATTT TCAAATGTGT GTATATATAT CCAATGGAAT
9651 GGACATATAT ATATGTATAT TTTTCCATA TTTTCTTTAT GTATTTCTTC
9701 ATTAATGGAT GTTTAGGTTG ATTCATCCCT TGGGTATATG AATAATGTTG
9751 ATGTAAACAT AGAAGGACAG ATATCTCTAT GACTTCTTAG TTTATTTAAA
9801 TATACACCCA GTAATGGAAG TGCTGTATAA TATGGTAGTT CTATTTTCAT
9851 TTTTGTAGGA ACTACCATAC CGTTTTCCTT ACTAATTGTA CTAATTTGCA
9901 TTCCCTCAA CAGTTTATAA AAGATCTTCT TTCTCTGCAT ACTTTCTAGC
9951 ACTTGTTATT TTTGCCTTTT GATAATAGCC ATAACAGGGG TGATGTGATA
10001 TCTCATTGTA GTTTTGATTT GCATTTCCCT GATGATTAGT GATTTTGAGC
10051 ATTTTGTAAT TATACTTCTT AGTCACTGAT AGTCTTCTTT TGAGAAGTGT
10101 CTATTCAGGT CTTTGTCTTA TTTTAAATC AAATTAGTAA TTTATTTTAA
10151 TTGACTGATG TGACTTCTAT GTATATTGA GATAGTAACT TATTGTCAGA
10201 TTCATAGTTT GCAAATATTT TTCATGTTGT GAATTGTCTC TTCACCCGT
10251 TGTTTGCTTC ATTTTCTCTG CACAAGCTCA ATGCTTTGAT ATAACCCATT
10301 TATCTACTTT TCCTTTTGTT GGCTGTGCTT CTGAAGTCCT ATCCAAAAA
10351 ATCCTTGCCCT AGACCAATGT CACAAATCAT TCCTCCTACA GTTTCTTCTA
10401 GTAGTTGTAT AATGTTTGGC CTTATATTTA ACTTTGTAAT TCATTTTAC
10451 TTACTTTGTA TATGGTGAGG GATAGAGGTC TAGTTTCATT TTCTGCATGT
10501 GGATATGCAG TTTTCTAGC ACCATTTAGT GAAGAGGTTG CCTTTTTTCT
10551 ATTATGTGTT CTTGGCACCT TTGTCAAAG TCAGTTAGCT GCTATATTCC
10601 TCCATTTGTG TTGTTATAGA GGAACACATG AGACTAGCAA ATTTATATAT
10651 CAAATAGAAT TATTTGAATG ATAGTTCTGC ATACTGTACA AGAAGCACAG
10701 CACTGACTTC TGCTTGGCCT CTGGTAAGGT TCTCAAGATG CTTCCACTTG
10751 TGGTAGAAGG CAAACATGAG CTGGTATATG CAAAGGTCCT ATGACAAGAG
10801 AGGAAACCAT AAAGAGGGGA TGTGAGGGAG TGCCAGGTTT TGTAAACAA
10851 CTAGCTCTTC TGGGAACATA TAGAGTAAAA ATTCGCCTCC CAGGCAGGGG
10901 ATTAATCTAT TCATGAGGGA TCTGCTTCCA TGACAAAGGC ACATTCGTGT
10951 AGATTCTACC CCCAATATTG GGGATCAAAT TTAAACATGA AGTGTGGAGG
11001 GCTCAAATAT CCATACTATG GCAGCAGTAA ATGCATAAAT TTATTTTGTG
11051 GATCTCTATT CTATATAGTA TTGGTGTATG TATCTGTTTT CATGCCACTG
11101 CCATACTGTT TTGGTGATGA TATCTATGCT ATATATGTGT GTGTGTATAT
11151 ATATATTATA TATATGTATA TATGTGATA TTATATATAT GTATATATGT
11201 GTATATTATA TATATATAAT ACTTTAAGTT TTATATATAT ATAAAATACT
11251 TTAAGTTCAA GGGTACATGT GCAGGATGTG CAGGTCAGTT ACATAGGTAT
11301 ACATGTGCCA TTTTGGTTTG CTGCATGCAT CAACTCATCA TTACATTAGG
11351 TATTTCTCCT AATGCTATCC CTCCACCAGC CACCAACCC CCAACAGGCC
11401 AGGTGTGTGA TGTTCCTCCG CCTGTGTCCA TGTGTTCTCA TTGTTCACTT
11451 CCTACCTAAA AGTGAGAACA TGCAGTGTTC GATTTTCTAT CCTTGTGATA
11501 GTTGTCTGAG AATGACTGTT TTCAGCTTCA TCCATGTCCC TCAAAAGGAC
11551 ATGAACTCAT CCTATTATAT GGCTGCATAG TATCCATGG TGTATATGTG

FIGURE 3D

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

11601 CTACGTTTTTC TTAATCCAGT CTATCACTGT TGGACATTTG GGTGTTCC
11651 AAGTCTTTTGC TATTGTGAAT AGTGCTACAA TAACCATATG TGTGCATGTG
11701 TCTTTATAGC AACATGATTT ACTATCCTTT GTGTACATAC CCAGTAATGG
11751 GATAACTGGG TCAAATGGTA TTTCTAGTTT TAGATCCTTG AGGAATCCCC
11801 ACACTGTCTT CCACAATGGT TGAACATAAT TACATTCCCA CCAACAGTGT
11851 AAAAACGTTT CTATTTCCCC ACATCCTCTC CAGTATCTGT TGTTTCCTGA
11901 CTTTTTAATG ATGGCCATTG TAACTCACAT GAGATGGTAT CTCATTGTGG
11951 TTTTGTGTTG CATTTCTCTG ATGACCAGTG ATGATGAGCA TTTTTTCATG
12001 TGCTTTTGG CTGCATAAAT GTCTTCTTTT GACAAGTGTC TGTTTCATATC
12051 CTTTGCCCCC TTTTCAATGG AGTTGTTTGT TTTTTTCCTG TAAATTTGTT
12101 TAAGTTTCATT GATATTCTG GATATTAGCC CTTTGTGAGA TGGGTAGATT
12151 GCAAAAATTT TCTCCCATTC TGTAGGTTGC CTGTTACACC TGATGGTAGT
12201 TTCTTTTGCT GTGCAGAAGC TCTTTAGCTT AATTAGATCC CATTTGTCAA
12251 TTTCGGCTTT TGTGCCATT GCTTTTGGTG TTTTAGTCAT GAAACCCTTG
12301 CCCAGGCCA AGTCCTCAGT GGTATAGCCT AGGTTTTCTT CTAGGATTTT
12351 TATGGTTTCA GGTCTAACAT TTAAGTCTTT AATCCATCTT AAATTAATTT
12401 TTGTATAAGA TGTAAGAAGG GATCCGTTTC AACTTCTAC ATATGGCTAG
12451 CGTGTTTTCC CAACACCATT TATTAAATAG GGAATCCTTT CTCCATTTCT
12501 TGATTTTGTC ATATTTGTCA AACATCACAT GGTAGAGAT GTGTAGTGT
12551 ATCACTGAGG CCTCTTTTCT GACTCCATTG ATCTATATAT CTGTTTGTGAT
12601 ACCAATACCA TGTGTTTTTC GTTACTGCAA CCTGTGAATG CAATTTGACA
12651 TTCAGGACCA TGATGCCTCC AGTCTCTTTT TTTTTTCTA AATAATTTTT
12701 TTGTCAATGT AAGCTCATTT TCGCTTCTTT CTGATCCATA AAGTATTTTT
12751 TTCCCATTTT GTGGAGAAG CCGCNNNNNN NNNNNNNNNN NNNNNNNNNN
12801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNGGCACA CCTCGTGCGC
12851 ATATATATAT ATATATATAT ATATACCTCT ATATATATAT ACATACATAC
12901 ATACATACAC ACCTCCTTGT CTGGTGTGGG ATCAGGGTAA TGCTAGCCTC
12951 ACAAGATGAT ACTGAAGTGT TTTTGCCTTT TTGACTTTTT GATGGTTTGG
13001 AAGAGTGAGA AAAAGTGTTA TTAATTATTC TTTAAATTTT GTTGAATTTT
13051 ATAGTGAAGA CCTTAGCTCA CTGGCTTTTT TAATGAGAAC TTTATTACTG
13101 ATTTAAACTT CTCTTCATT ATTTATTTCT GCCTTGTTTT TATTCTTCA
13151 TAATCCAGTC CTATTTTATG TGTCCACTAA ATTGTTTATT TTCCTAGAAT
13201 TTTTCCATTT ATTGGCATAT GCATGTCCAT AGAAGCCTTT TATAGTCCTT
13251 TTCATTTCTA GTGTCATTTT TTTCCTTTTT TTTAAGAATC CTTAAGATTT
13301 TAGAGATGAA ATGTCACCTT GTTACGCATA CTGGAGTGCG GTGACATTAT
13351 TATAGCTCAC TGAAACCCAA ACTCCTGAGT TTAAGCAATC CTTCTACCTC
13401 AAAATTCCAA AATTCTGAG TAGCTGAGAC AGGCATACAC CATCAAGACT
13451 GGCTAAATTTA TTTCAAATTT TGTAGAGATG GGTCTTACT AAGCTATTCT
13501 CAATCTTTGG GCTTCAAGTG ATTCTTCAGC CTCTGTCTCT GAAAATGCTG
13551 GGTTTATAGA TATGAGCCTC TATGCCTGAT TTGCTTTGTC TCTTTGTAAT
13601 CTCCCATTTT ATTTGTGTCT TTTCTGGTTT GTTTCATTTT GTTATGTTTT
13651 CAGTTACCTT GCTAAAGCTT TGTCGATTTT ATCTCTTCAA ACAACTAACT
13701 CAATATTTTG CTGATTTTCC ATATAGTATT TTATTTCTAT TTCATTTATT
13751 TCTGCTCTAA TCTTTGTTAA ATATCTTGTT TCCTAATAA TTTTGAGTTT
13801 CCTGTCTCTT GTTTTCTAAT TCCTTGCGAT GTTATCATAA ATTGTTTATT
13851 TGATATCTTT CTACTTTTTT GATGTGTGTG TTCGTTGTTG TAGACTTTCC
13901 TCTTTATTAT TCTGATTTCT TCCTCAATTC TCTAATATTA TGATTGCATT
13951 ATTTTCCAAG TTTCTTTTGT TTTTTTATTT ATAGTTTATG TGATTCCCTGA
14001 ACTTGTCAAA GAGATTATTG TGAATTTGAT GTCGGATATT TAAGCATTTT
14051 CAAAACCTTT GGTGCATTAT TGAAATTTTA TTGGTTTATT TTAGAGATGT
14101 CATACTTCCC AGTTTTTTTT TAACAATACT TGCTCTTTAT ATTGATGTCT
14151 ACATATTTAA AAAGATAACC ACCTGATTCA GCTTTTTAAG GTGATATGCA
14201 GTGGTGTTAA GTGTGTACTG CTTAATATCA GAGCTGAATC ACTGCCCTGA
14251 GGATTCCTTT TGTCTGAGG AGAGCTTGTA GTTAATAGCA GAACCTAAAT
14301 AGTGCAGTAG AGCTAAATCT CTTCCATGCT GTTGTTTTCC TGTCTGGGGA
14351 AGACTTATCA TGACCATGAA AACATAATGC TGTGCCAGAA CTTAAACCCA
14401 AACCTGTAGT AATTTCTGAG TTGAGGAAGG CTTAAGAAAT AACTGGAAC
14451 TAGTTACTAA CCTGATAGTT GTTCTGAGT CAGAGAAATG CTCTGCATGA

FIGURE 3E

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

14501	TCACCTGGGA	TATTTGTAAA	ATCTAACCAA	AGATTCTAGC	CTTCCCCTTG
14551	GATTGTGCCT	CCTGTACTAC	TGTAGTGCTG	GCTAGGTCCT	CATCAGTGAA
14601	TTCCCTGCTG	ATAGGACCAC	AAAGCATCTG	CCAAGATCTG	TTTGCCATTT
14651	GCTGTGATTA	GTGCTTCTGC	TCTTTGCTTC	CAATTCAACT	CAGGTGGTTC
14701	AGCCCTTCTG	ACACTCCTAA	TACCTCCTGT	GGGATGGAAC	ATAGAAGGCT
14751	TCTCACAATG	ATTACACAC	TGATATGGAG	ATTGAATGTC	CAGTTGCAAC
14801	TATTTTCTTC	CACCTGTGTA	ATTGCAGGTA	CAGGGAAGTT	TTCTGTGACT
14851	GATGCTATTT	TGGTTTGGAG	AATGGGGTGA	TGTGGCACAA	TGATCTTTCT
14901	TCTTTCTGGT	CATGGATTTT	TTAATTTCCA	TGAACCCATA	AGATTTTTC
14951	CTTTTCTTCT	GAGCTCTGGT	GCTTTCAGAG	TGGTATTTT	ATATTCGAAT
15001	AACCTTTTATT	TGAATTTTGA	AAAGCGATTG	ATGCTGGAGG	TCTTCTATT
15051	CACCATCTCG	CTGATGTCAG	TCCTCAAATA	ATAATTTTAT	ATTTTAGCAA
15101	ATTATTTTGG	TTTTAGGATT	TTGTGTCTAC	GTGACACAGA	CATGAAAAGA
15151	GATGTACTCA	TTACTGAAAC	TTTTTGCATA	CTGTTTGGT	TGTGCGCCTT
15201	TTCTAGTATG	AATGATTACA	TATTTAAGCC	ACATGTTTTA	TACATAGACT
15251	GTCCTTTAAA	GAGACTAGAT	AGTCTGTGT	GTCAGCATAT	AGGGACAGAA
15301	TATAACTACA	CATTAATAAT	TTCTCAAGTA	TTTATTTTAG	AAGTGTAAGT
15351	AACCTTTTATT	TTAATTTTGG	TTATATTATG	CCTCTGTAAT	GCAGATAAAT
15401	TTTTATCTTC	AGGAAATGGA	AAATTTTGTC	CAGAGTTCAG	GGGAAGATGG
15451	TATTGTGGTG	TTTTCTCTGG	GGTCACTGTT	TCAAAATGTT	ACAGAAGAAA
15501	AGGCTAATAT	CATTGCTTCA	GCCCTTGCCC	AGATCCCA	GAAGGTCAGT
15551	AAAACCTCCA	ATCCTGATAA	GCAGCTATTC	ACATAATGAA	ACAGTATGGT
15601	TTTATTTGGG	TCTTGAATCT	CATTTTCCAC	TTAGCATAAC	AGGTACCAAA
15651	ATTTGCAAAA	CATTATAGTA	GTGTACATGG	GCATACTGA	TCATTGCTT
15701	ACTGAGTCTT	GCTGTACTG	GAAACAACCT	TCTTGATTGT	CATTTGTTTA
15751	TAATAAAATA	GATATAATAA	ATAAAGCTCT	ACCTTATATT	TTAGGATTTG
15801	AAATCTAAAA	GCGTGTGCCA	ATGATTCCAA	AAAAAATTC	TGACATCTAT
15851	TATTTCAAAG	GACCAGAAAA	AGGAAACTG	ATATAAAAAA	AAAAAGAAGA
15901	ATCAATCTCA	AGAATATCTT	CTCATATTTG	TGTGTATAAA	AACTGTATTC
15951	AGGGTAGTTT	TGCTTAGAAA	TAAAAGCTCA	GATTAATGTA	GTCTTCTTAA
16001	ATAATTAGAA	GTTTCAAAAAG	TAAAATGTCA	ATTACAATTA	TAGTATAGTA
16051	ACAATTATTT	AAGTAATGTA	ATTATTTATG	ATACTCCACT	AATTTTAACT
16101	TTATTATTAC	TGTAATTCTA	GAATTTCA	CTTTAGATAG	TGCTATATAT
16151	AACTATCCA	AAAGATATTT	CATTTTATAT	TTAGCTAAAA	TACTTCAAAC
16201	TCAATAAAGG	CAAGCATACT	AATTAGGAAT	TTGAAATATT	GTAATTTCAA
16251	TTATGAAATT	ATCTGTTAAG	TAGTTTGAAA	CATCTATGCC	GTTCTTTGTT
16301	TTCAAATGTA	TAAAATTTGT	ATAGGTGTCC	AACAAAGAAA	AATTGTGTAA
16351	AAAAAAGGTA	CAATCTCAAA	GAAAATTTAT	CATTGAACAG	TGGAACATAA
16401	GTAATTTTCT	AGCTCATTCT	TCTTCAATAA	AACAATTAAA	TATAAGAAGA
16451	AAGAGGCCAG	GAAGGAAATA	GAGAAGAAAA	GACACCCGAT	TATCCAAAAG
16501	ACACACATAA	TTGAAAGCAA	ATTTTATCT	GCAGGGAAC	GTAATTTTGA
16551	TGGTAGAATG	AGATTGGCTC	CATGAGTTAA	AATGACACAC	AGATCAGGTA
16601	CTTATAAAAT	TTTTAATTCT	TATATAAAAA	TAGATTAGCC	ACTGCTGAAT
16651	TATTTTTTTA	AATATTCAC	GGTATTCTCA	TTCTCAAATA	TTTTTAATTG
16701	GTAATAAAAT	AATAATAGCA	TACCTAATAG	GCAACTGGTA	CACATTATTT
16751	TAAAAGATCT	TTGTAAAACG	TCCTACTATA	TCTTTCAGTC	TTTACGCGGT
16801	AGCTCTACAC	ACCCCTGTCT	CAACCATCAC	CTGAAGTACA	ATGAGTTTAT
16851	AATTTATAAC	TATATCTACA	TCCTTAGAAT	GCTAATATCC	TGTGGTTTAC
16901	TCTGTGAAAT	ACATGTGTTT	CTTCCGTAGG	TGTTATGGAG	GTACAAAGGA
16951	AAAAAACCAT	CCACATTAGG	AGCCAATACT	CGNNNNNNNN	NNNNNNNNNN
17001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNAAAAAA
17051	AAGACCCAAT	CCCAAAGAAA	ATTTATCATA	GAACAATGGA	ACATAGGTAA
17101	TTCTCTAGCT	CATTCGTCTT	CAATAAAACA	AATAAATATA	AGAAGACAAA
17151	GGTCAGGAAG	GAAATAGAGA	AGAAAAGATA	ACCGATTATC	CAAAATCACA
17201	CACAAAATTG	AAAGCAAATT	TTATCTGTGG	GGAACGTGTA	ATTTGATGGT
17251	AGAACCAGAA	TAGTTCCATG	ATTTGAAATG	ACACAGAGAT	CATGTACTTA
17301	TAAAATATTT	TATCTTTATA	AGAAAATTGA	GTAGCCAGTG	CTGAATTACT
17351	TTTTAATGAT	TCCTGATAT	TCTCATACTC	AGATATTTTA	ATTGATATTA

FIGURE 3F

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

17401 AAATAATAAT AGTATACTTA ATAGTCAACT GGTACACATT ATTTGAAAGG
17451 ACTTTTGTAA AAAGTCCTAC TATGTCTTTT ACTGTTTACA CAGTACCTCT
17501 ACATACCCCT GTCTCAACCA ACACCTGAAG TACAATGAGT TTATAATTTA
17551 TAACTATATC TACATCCTTA GAGTGCTAAT ATCCTGTGGT TCAATCTGTG
17601 AAATACATGT GTTTCCTCCA TAGGTGTTAT AGAGATACAA TGGAAAAAAA
17651 ACCATCCACA TTAGGAACCA ATACTCGGCT GTATGATGGG ATACCCAGA
17701 ATGATCTTCT TGGTAGGTCT ATGAGAAAGT AAAAATATGA ACTAGACGAG
17751 GAAAAAATGA ATAAATGTTA AACAGCAAGC AAATTCAGCA AAGATCTAAA
17801 ATTATAAAAC TTTATTTTAC TTACTCTTTT GAAGCAGATA TAATTAAAGG
17851 ATTGACTAAA ATGTATAGA TTCACACTTT CTATTGTTAA GGTGAGAGTG
17901 ACAGGAAATT CAGAAGGAAT TAATGCCTAT TTTTCTGGAG ATAGAAATGA
17951 TCTTTAGTAG CAATGCTCCA TGTGCTCACC TTCTAAAGAA AGTGCTGTAC
18001 GCTTCAGTGA GTTATCTCGT AATTCCCATC TGTAAGTTTT AAATAATTTT
18051 AAAAGTTTAG AATAAAATAT CTCACCATT CTACATCCAAT TTACATACCTA
18101 GGTTCATCCCA AAACCAAAGC TTTTATCACT CATGGTGGAA TGAATGGGAT
18151 CTATGAAGCT ATTTACCATG GGGTCCCTAT GGTGGGAGTT CCCATATTTG
18201 GTGATCAGCT TGATAACATA GCTCACATGA AGGCCAAAGG AGCAGCTGTA
18251 GAAATAAACT CAAAAACTAT GACAAGCGAA GATTTACTGA GGGCTTTGAG
18301 AACAGTCATT ACCGATTCCCT CGTAAGTACT ACTGCTTGTA CAGACTGATC
18351 TAACATTGAC TATGTTATAC ATTATACCAG AAAATGTTAA ATATCATCCT
18401 GGTAGACATG TTGAGGGATT TTAATCCACA ATATTGAGTC ATTCATCACC
18451 TTGTTACTGG AATAGTTGTG GAAATTGTAG TTCATAGAGT GTCAAACCTT
18501 CTTTCATGGAA ATATTAGGTT TAAGTTAACA ACTGGCTTAC TAAGCTTTTA
18551 TTCACATCTT AATTTTACCC CATTTTGTTA AGAATATACT CTTTCAGTCT
18601 CTCCTACTATA TCTGTTTAAT ACTATGTAAC CAACAATATT CATGTCACAA
18651 CCAGAATCAA TCTTTTACTG AACATGTTCT TGGCTTGCAT AACATATACT
18701 ACGGTTTATC TACGTGTCTT TTATGAAAAC AAAACTACAA CTTTCTAAGT
18751 TCATGTGTG TTTTCCCTT CCAGTTATAA AGAGAATGCT ATGAGATTAT
18801 CAAGAATTCA CCATGATCAA CCTGTAAAGC CCCTAGATCG AGCAGTCTTC
18851 TGGATCGAGT TTGTCATGCG CCACAAAGGA GCCAAGCACC TGCGATCAGC
18901 TGCCCATGAC CTCACCTGGT TCCAGCACTA CTCTATAGAT GTGATTGGGT
18951 TCCTGCTGAC CTGTGTGGCA ACTGCTATAT TCTTGTTTAC AAAATGTTTT
19001 TTATTTTCTT GTCAAAAATT TAATAAACT AGAAAGATAG AAAAGAGGGA
19051 ATAGATCTTT CCAAATTCAA GAAAGACCTG ATGGGGTAAT CCTGTTAATT
19101 CCAGCCACAT AGAATTTGGT GAAAACCTTG CTATTTTCAT ATTATCTATT
19151 CTGTTATTTT ATCTTAGCTA TATAGCCTAG AATTCCACGA TCATGAGGTT
19201 GTGAGTATAT CTCATTCTTT CGTGTATTTT TCCTAGGTGT CTTTACTCTC
19251 TTCTCTCACT TTGTGACACA AGGACATGAA TACATCTAAA TTTTCTATT
19301 TCTGATATGA CTGTTTGTAT GATGTCATTA CTTCTATAAC CTTAAGTGAT
19351 AGGGTGACAT GCAATATGAT TATTCCTGGT GTGCGCCCAA ACACATGGAT
19401 ATAAAGAGGT AAAAACTTA AAATTCACAA AATTCAGTAA ACCACACAAA
19451 TCAGGTAAGT GTTCTATGAG ATTAGCTGGC TATGAGAAAC ATAATGATGT
19501 TTCTTTTCA ATTTAAATAA GCCCTTCTAC ATAGCCAGCA TCAGTGATCT
19551 CAGAAAATAA ATTGCTAATA ATGATGACAT GGCATTATGC TTAGAAAAGT
19601 TTGCTGTATT TCCATAGACC TCATCTAGAT GTCATGGCCT ACATTTCTGC
19651 CATCACTCAA CCAATACTTT TTTCTGTTTT CTGATGATA AAAAGACCTT
19701 TCTCATGATT GCCATCAAAT AACAAAAGAA ACTATTTTTT TTCTCACATA
19751 GAGAACATGT CAGTAAGATA TTCAAGGTGA ACAGATATTT TTGGGATTAG
19801 TAACTATTTG AAATATGTGG TGATAATTAC TGAGTTTATA AAATTTATTT
19851 GATAGTACAC TTAAAGAAGA TTTATATGTT TATTCCTTAA AAATGATGAA
19901 TACTCATAAT TCTTATCTCT ATAATCAAAA GTATAATTTA CTGTAGAAAA
19951 ATAAAGAGAT GCTTGTTCTG AAAGTAAGAT CAGTGAAGTG CTTTTCAGTC
20001 TCAATCTTTG AGAATTGTAA ATTCATCAAA TAATTGCTTA CATAGTAAAA
20051 ATTTAAGGTA TTAGAAAACC TGCATAACAA ATAGTATTAT ATATTAAATA
20101 TTTTGATATG TAAAGCTCTA CACAAAGCTA AATATAGTGT AATAATGTTT
20151 AACTAGTAA GCAAATATGT TAATCTTCTC ATTTTTTTTAC TGTCATATAA
20201 TCTTAGTGAT ATGCCTATTA ATAGTTTAA ATAAATAAAT TGGCTTATCT
20251 GGCTTTTTGA AAATTTTGAA ATCTTACAG ATGTTGATTA GGTATATCTA

FIGURE 3G

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

```

20301 CAAATTAATT TCAATTTTAA AATGATGATA TAAAAATAAA TATAAGTATT
20351 TTCTTGTTGT ATGTATACAA TAAATATAAA TAAAATTGTT TACTGTTTTG
20401 AAAGTTTCTT AAGTTTTTAC ACTGATATGT TTTTGGACTT TTACAATATT
20451 ATTATAATCT AGGAAAAGCT GATTATATCT GTTTTAAGCC TCATCTTTTC
20501 TCTGTAATTA AACACAGTAA TTTATTAACA TGCTGTGACA GGTGGGAAGC
20551 CATTCTGGA GTTGAGCCTG CTGACACTCT GGAGCTTTTT AGGTGGACG
20601 TTCATTGTAT GTGGGACTCT CTGCCTCTCG ATAGCTGTTG CTCATAAGAC
20651 TCTCCTTCAT CAATCTGGCA TGAATTTTG CGATCAGTTG CAATCAGAAT
20701 CCAATTGGCC TTGCCGTTT AGTATGTTCT ATCTTAACCA GCAATTTCTA
20751 ACCAGGAGCC TGCCCAGGTT TGTTCGTCT TCCCTGTAAG AAGCTCCCAG
20801 CATAAATATT CTAAATTTTA CACTACTAAT CTATTAACCA ACCTTTGGAC
20851 CATGTTCACT TTAGGTTGAG CATAGTGTGA TGAGATGCAA ATTAAATTAC
20901 AATCCTATAG GTGTGTGTTA TAAATTTTAA AGTGATATAA TTAAATAACA
20951 CATTCTAAGT ATCCAACAAA GGTCAAAAAA ATGATATAAA GTCACCAAAC (SEQ ID NO:3)

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FEATURES:

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Start: 197
Exon: 197-911
Intron: 912-6498
Exon: 6499-6647
Intron: 6648-15412
Exon: 15413-15544
Intron: 15545-16929
Exon: 16930-16940
Intron: 16941-17632
Exon: 17633-17712
Intron: 17713-18101
Exon: 18102-18321
Intron: 18322-18774
Exon: 18775-19051
Stop: 19052

```

CHROMOSOME MAP POSITION:

Chromosome 4

ALLELIC VARIANTS (SNPs):

DNA

Position	Major	Minor	Domain
1735	A	G	Intron
1922	A	G	Intron
2361	C	T	Intron
7371	G	C	Intron
9558	G	A	Intron
10579	T	G A	Intron
10625	C	T	Intron
11147	A	G	Intron
15131	C	T G	Intron
15221	A	G T	Intron
15778	T	C	Intron
15895	-	A	Intron
19786	-	T	Beyond ORF (3')
20157	G	A	Beyond ORF (3')
20246	T	C	Beyond ORF (3')
20681	C	A	Beyond ORF (3')
20819	T	C	Beyond ORF (3')

FIGURE 3H

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

Context:

DNA
Position
1735

TACTTTACTGATATACACCTATTTGACTTATTTTTATTTCTTTGCTTTACTGATAAAAAG
TTGTTTTGCTTTGCAATTTTCATATAGTTGTGATCAGAGCTGGTCAATGCAAGACATGTT
TTTATCCAAATATGTTTGAGAATTATGTAGAAACATGAAAAAGGTACAATTATATCCGA
CACTAAAAATATTGTTTAAATGTATTCCAACGAATTC'TTATGCATAGACTGTTTCACAGAAC
TAATATTACAGAGGATCCCAGTTCAAATGTCCTTAGCCTTAGACATGATTGAATTTACAT
[A, G]
TATTGATTGCTTTAAATAATTTTCCATTACAGTAAGCTGTGCCTAGCTGCAGATAGCCTA
CCAGGCTTTATGGATCTAGGTAAACAATACAAATCTCTTGGCCTCAAGTCTACATTCAGA
TATTAATTTAAAGGGGTACAGCTATATAGAGGTCACTGGCAAATTTTGGTAAAAATAGGAT
TATAGTAAAGCCCCCTGACAAGATTGAAATTTAAATAAAACAAAAGTGTATCAAAGG
GGTGAAGAGCATT'TTCCAATAAACAAAAGTGGGTTC'TGGCCATGCATT'CAGAAAT'TCCCCAACAA
1922 ATATTGTTTAAATGTATTCCAACGAATTC'TTATGCATAGACTGTTTCACAGAACTAATATT
CAGAGGATCCCAGTTCAAATGTCTTAGCCTTAGACATGATT'TGAAT'TTACATATATTGA
TTTGCTTTAAATAATTTTCCATTACAGTAAGCTGTGCCTAGCTGCAGATAGCCTACCAGGC
TTTATGGATCTAGGTAAACAATACAAATCTCTTGGCCTCAAGTCTACATTCAGATATTAA
TTTAAAGGGGTACAGCTATATAGAGGTCACTGGCAAATTTTGGTAAAAATAGGATTATAGT
[A, G]
AAAGCCCCCTGACAAGATTGAAATTTAAATAAAACAAAAGTGTATCAAAGGGGTGAAA
GAGCATT'TTCCAATAAACAAAAGTGGGTTC'TGGCCATGCATT'CAGAAAT'TCCCCAACAA
TCTTTAAATAATCATGGAGCAGCTTGATATATAAGAAATTCATTTAATAACTATATTTATT
ATGTAGCTCCAACCTACTAAATTATTGATTATTATATATTTTATAGAATTATCTATTGTG
AGTCTAAATCAAGAGTATATATTCAAACAACCTATAGGAAAAGGGATATCAGTCAATTTCA
2361 CAGCTTGATATATAAGAAATTCATTTAATAACTATATTTATTATGTAGCTCCAACCTACT
AAATTATTGATTATTATATATTTTATAGAATTATCTATTGTGAGTCTAAATCAAGAGTAT
ATATTCAAACAACATATAGGAAAAGGGATATCAGTCAATTTCAATTCAGGATTTATTTCC
ATAAGTGC'TTACGCACAGGTGTATTTTCAATTTTATTATACATTGCTTTATTGTCTTCACA
AAAATTGCAATTTACAAATTAAAGGTTTTTGAACCTTGAATCAAGCTAATCAATTTGG
[C, T]
GTAATATTTCCAACAACAAGTGTGTACTTTTGACTCTATCACATATTGGCATT'TATCATG
CTTTTTCAAATTTTTCATTGTATATCTGTACGGTGATCTGGGATCAGTGTCTCTTGAT
GGTTACAGT'TTATTAGCTTGGGGGCACCTTGATGTGT'TACAATATAAGACAGCAAACCT
AATTATAAATGTTTGTGCATGTACTAACTGCTCCGCTGATTCGTTTCCCCATCCCACTTCT
TCTTAGGCTTCCCTATTCCTTGAGACACAGTAATATAACATACAATGACTTCTAAATGTT
7371 AAATAAGTGATGAAGGAAGACAAAGAATAAAAGAAAATTTCAATAAATGGAAAGTTTAA
TGTTTAAATGATAGTGATGACTTTTACTCAAATAAGTGCTTAGAAGTCATCTTGTTTGTGA
TTTATATGATGAATTCGTGTGTGACTATCCACTTTGAGCTCGTGAGAATGTTAGGTGA
GGTTTAATAAAAAGCCATTTGAGAAAAACAAGGTTTCAACCTCTGTGGACAGAAATCTAAA
TATCGATAGTTATCAGGACAAAGTAGAGCTCATAGAAATAATTTTGCAGCCTGCAGGTTT
[G, C]
TTTTGGAGTGAAAATAAAATGTATACATATTCCTAAATCATCAGAGGAAAAAATTTAT
AGTTCAAGGAATGTTGAAAGAAACAATATTGAGAAGTAAAAGTGAGTAATAGTTGTTATA
GTTTTTTAATAGTTTTGTAAAGTATGCTTGAGTTCAGTGTCCCAAAGTGGCTATTAGCT
CTAGCCTTGACCTGACAAGGTTCTAGGATATTTAGTCATGGATGTTTATAATCTACCTCT
TACGGGATACTTTTTATTCTGATGAACAGCCTAATGCCTAAGTGTGCAATCTATACCAAG
9558 TCCACATATAAGGGATACCATGCTATCTCTGCCTGGATTATTTAGTTAACATTATGCCC
TGGAGGTTCAATTCATGTTTCTACAAATGACAGGATTTCAATCTTTTTTTTCCAATATATA
TTTAATGAAATGGATATATATAAACATTGGAAAATGTATATATATATATATATCTCCAGT
GGAATGCTATTGAGCTATAAAAAAGTTAATATATAATAGAAAATAAGCTTATATATATCT
AATGGAATGGATATATATATATAATGGAATAGAAATATATATCTATACATATAAACACAC
[G, A]

FIGURE 3I

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

CAATATACATATCCATTTTCATTGCATATATATATATATAGAGAGAGAGAGAGAGATAT
TTTCAAATGTGTGTATATATATCCAATGGAATGGACATATATATATGTATATTTTTTCCA
TATTTTCTTTATGTATTTCTTCATTAATGGATGTTTAGGTTGATTTCATCCCTTGGGTATA
TGAATAATGTGTATGTAACATAGAAGGACAGATATCTCTATGACTTCTTAGTTTATTTA
AATATACACCCAGTAATGGAAATGCTGTATAATATGGTAGTTCTATTTTCATTTTTTGAG

10579 CAATGCTTTGATATAACCCATTTATCTACTTTTCCTTTTGTGGCTGTGCTTCTGAAGTC
CTATCCAAAAAATCCTTGCCCTAGACCAATGTCACAAATCATTCCTCCTACAGTTTCTTC
TAGTAGTTGTATAATGTTTGGCCTTATATTTAACTTTGTAATTCATTTTTACTTTACTTTG
TATATGGTGAGGGATAGAGGTCTAGTTTCATTTTCTGCATGTGGATATGCAGTTTTCCTA
GCACCATTTAGTGAAGAGGTTGCCTTTTTTCTATTATGTGTTCTTGGCACCTTTGTCAAA
[T, G, A]
GTCAGTTAGCTGCTATATTCCTCCATTTGTGTTGTTATAGAGGAACACATGAGACTAGCA
AATTTATATATCAAAATAGAATTATTTGAATGATAGTTCTGCATACTGTACAAGAAGCACA
GCACTGACTTCTGCTTGGCCTCTGGTAAGGTTCTCAAGATGCTTCCACTTGTGGTAGAAG
GCAAACATGAGCTGGTATATGCAAAGGTCCTATGACAAGAGAGGAAACCATAAAGAGGGG
ATGTGAGGGAGTGCCAGGTTTGTAAAACAACCTAGCTCTTCTGGGAACCTAATAGAGTAAA

10625 GTGCTTCTGAAGTCCTATCCAAAAAATCCTTGCCCTAGACCAATGTCACAAATCATTCCT
CCTACAGTTTCTTCTAGTAGTTGTATAATGTTTGGCCTTATATTTAACTTTGTAATTCAT
TTTTACTTACTTTGTATATGGTGAGGGATAGAGGTCTAGTTTCATTTTCTGCATGTGGAT
ATGCAGTTTTCCTAGCACCATTTAGTGAAGAGGTTGCCTTTTTTCTATTATGTGTTCTTG
GCACCTTTTGCAAAAGTCAGTTAGCTGCTATATTCCTCCATTTGTGTTGTTATAGAGGAA
[C, T]
ACATGAGACTAGCAAATTTATATATCAAATAGAATTATTTGAATGATAGTTCTGCATACT
GTACAAGAAGCACAGCACTGACTTCTGCTTGGCCTCTGGTAAGGTTCTCAAGATGCTTCC
ACTTGTGGTAGAAGGCAAACATGAGCTGGTATATGCAAAGGTCCTATGACAAGAGAGGAA
ACCATAAAGAGGGGATGTGAGGGAGTGCCAGGTTTGTAAAACAACCTAGCTCTTCTGGGA
ACTAATAGAGTAAAAATTCGCCTCCCAGGCAGGGGATTAATCTATTCATGAGGGATCTGC

11147 ACAACTAGCTCTTCTGGGAACTAATAGAGTAAAAATTCGCCTCCCAGGCAGGGGATTAAT
CTATTCATGAGGGATCTGCTTCCATGACAAAGGCACATTCGTAGATTCTACCCCCAAT
ATTGGGGATCAAATTTTAACATGAAGTGTGGAGGGCTCAAATATCCATACTATGGCAGCA
GTAAATGCATAAAATTTATTTGTGGATCTCTATTCTATATAGTATTGGTGTATGTATCTG
TTTTCATGCCACTGCCATACTGTTTGGTGATGATATCTATGCTATATATGTGTGTGTGT
[A, G]
TATATATATATATATATGTATATATGTGTATATTATATATATGTATATATGTGTATATT
ATATATATATAATACTTTAAGTTTTATATATATATAAAATACTTTAAGTTCAAGGGTACA
TGTGCAGGATGTGCAGGTCAGTTACATAGGTATACATGTGCCATTTTGGTTTGCTGCATG
CATCAACTCATCATTACATTAGGTATTTCTCCTAATGCTATCCCTCCACCAGCCACCCAA
CCCCAACAGGCCAGGTGTGTGATGTTCCCGCCCTGTGTCCATGTGTTCTCATTGTTCA

15131 CAGGGAAGTTTCTGTGACTGATGCTATTTTGGTTTGGAGAATGGGGTGATGTGGCACAA
TGATCTTTCTTCTTCTGCTCATGGATTTTTTAATTTCCATGAACCCATAAGATTTTTCA
CTTTTCTTCTGAGCTCTGGTGCTTTCAGAGTGGTATTTTTATATTGCAATAGTTGCTAGT
TGTACTTTTAAAAGCGATTGATGCTGGAGGTCTTCTATTCACCATCTCGCTGATGTCAG
TCCTCAAATAATAATTTTATATTTTAGCAAATTATTTTGGTTTTAGGATTTTGTGTCTAC
[C, T, G]
TGACACAGACATGAAAAGAGATGTACTCATTACTGAAACTTTTTGCATACTGTTTTGGTT
GTGCGCCTTTTCTAGTATGAATGATTACATATTTAAGCCACATGTTTTATACATAGACTG
TCCTTTAAAGAGACTAGATAGTTCTGTGTGTCAGCATATAGGGACAGAAATATAACTACAC
ATTAATAATTTCTCAAGTATTTATTTTAGAAGTGTAAGTAACCTTTATTTTAATTTTTGT
TATATTATGCCCTCTGTAATGCAGATAAAATTTTATCTTCAGGAAATGGAAAATTTGTCC

15221 TTAATTTCCATGAACCCATAAGATTTTTCACTTTTCTTCTGAGCTCTGGTGCTTTTCAGAG
TGGTATTTTTATATTCGAATAGTTGCTAGTTGTACTTTTAAAAGCGATTGATGCTGGAGG
TCTTCTATTCCACCATCTCGCTGATGTCAGTCCCTCAAATAATAATTTTATATTTTAGCAA
ATTATTTTGGTTTTAGGATTTTGTGTCTACGTGACACAGACATGAAAAGAGATGTACTCA

FIGURE 3J

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

TTACTGAAACTTTTTGCATACTGTTTTGGTTGTGCGCCTTTTCTAGTATGAATGATTACA
[A, G, T]
ATTTAAGCCACATGTTTTATACATAGACTGTCCTTTAAAGAGACTAGATAGTTCTGTGTG
TCAGCATATAGGGACAGAATATACTACACATTAATAATTTCTCAAGTATTTATTTTGA
AGTGTAAGTAACCTTTATTTTAAATTTTGTATATTATGCCTCTGTAATGCAGATAAATT
TTTATCTTCAGGAAATGGAAATTTTGTCCAGAGTTCAGGGGAAGATGGTATTGTGGTGT
TTTCTCTGGGGTCACTGTTTCAAATGTTACAGAAGAAAAGGCTAATATCATTGCTTCAG

15778 GTTTCAAATGTTACAGAAGAAAAGGCTAATATCATTGCTTCAGCCCTTGCCAGATCCC
ACAGAAGGTCAGTAAAACCTCCAATCCTGATAAGCAGCTATTCACATAATGAAACAGTAT
GGTTTTATTTGGGTCTTGAATCTCATTTCCTTCCACTTAGCATAACAGGTACCAAATTTGCA
AAACATTATAGTAGTGATGATGGGCATAACTGATCATTTCCTACTGAGTCTTGCTGTTA
CTGGAAACAACTTCTTGATTGTCATTGTTTATAATAAAATAGATATAATAAAATAAAGC
[T, C]
CTACCTTATATTTTAGGATTTGAAATCTAAAAGCGTGTGCCAATGATTCCAAAAAAT
TCTGACATCTATTATTTCAAAGGACCAGAAAAAGGAAACTGATATAAAAAAAGAA
GAATCAATCTCAAGAATATCTTCTCATATTTGTGTGTATAAAACTGTATTCAGGGTAGT
TTTGCTTAGAAATAAAAGCTCAGATTAATGTAGTCTTTCTAAATAATTAGAAGTTTCAA
AGTAAATGTCAATTACAATTATAGTATAGTAACAATTATTTAAGTAATGTAATTATTTA

15895 TATGGTTTTATTTGGGTCTTGAATCTCATTTCCTTAGCATAACAGGTACCAAATTT
GCAAAACATTATAGTAGTGATGATGGGCATAACTGATCATTTCCTACTGAGTCTTGCTG
TTACTGGAAACAACCTTTCTTGATTGTCATTGTTTATAATAAAATAGATATAATAAATAA
AGCTCTACCTTATATTTTAGGATTTGAAATCTAAAAGCGTGTGCCAATGATTCCAAAAA
AAATCTGACATCTATTATTTCAAAGGACCAGAAAAAGGAAACTGATATAAAAAA
[-, A]
GAAGAATCAATCTCAAGAATATCTTCTCATATTTGTGTGTATAAAACTGTATTCAGGGT
AGTTTTGCTTAGAAATAAAAGCTCAGATTAATGTAGTCTTTCTAAATAATTAGAAGTTTC
AAAAGTAAATGTCAATTACAATTATAGTATAGTAACAATTATTTAAGTAATGTAATTAT
TTATGATACTCCACTAATTTTAACTTTATTTACTGTAATTCTAGAATTCACACTTTA
GATAGTGCTATATATAAACTATCCAAAAGATATTTTCAATTTATTTTAGCTAAAATACTT

19786 GAAACATAATGATGTTTCTTTTCAATTTAAATAAGCCCTTCTACATAGCCAGCATCAGT
GATCTCAGAAAAATAAATTGCTAATAATGATGACATGGCATTATGCTTAGAAAAAGTTTGCT
GTATTTCCATAGACCTCATCTAGATGTCATGGCCTACATTTCTGCCATCACTCAACCAAT
ACTTTTTCTGTTTCTTGATGATAAAAAGACCTTTCTCATGATTGCCATCAAATAACAA
AAGAACTATTTTTTCTCACATAGAGAACATGTCAGTAAGATATTCAAGGTGAACAGA
[-, T]
ATTTTTGGGATTAGTAACATTTTGAATATGTGGTGATAATTACTGAGTTTATAAAATTT
ATTTGATAGTACACTTAAAGAAGATTTATATGTTTATTTCTTAAATGATGAATACTCA
TAATCTTATCTCTATAATCAAAAGTATAATTTACTGTAGAAAAATAAAGAGATGCTTGT
TCTGAAAGTAAGATCAGTGAAGTCTTTTCACTCTCAATCTTTGAGAATTGTAAATTCAT
CAAATAATTGCTTACATAGTAAAAATTTAAGGTATTAGAAAACCTGCATAACAAATAGTA

20157 ACACTTAAAGAAGATTTATATGTTTATTTCTTTAAAAATGATGAATACTCATAATTCTTAT
CTCTATAATCAAAAGTATAATTTACTGTAGAAAAATAAAGAGATGCTTGTCTGAAAGTA
AGATCAGTGAAGTCTTTTCACTCTCAATCTTTGAGAATTGTAAATTCATCAAATAATTG
CTTACATAGTAAAAATTTAAGGTATTAGAAAACCTGCATAACAAATAGTATTATATATTA
AATATTTTGATATGTAAAGCTCTACACAAAGCTAAATATAGTGAATAATGTTTACACTA
[G, A]
TAAGCAAAATATGTTAATCTTCTCATTTTTTTTACTGTCATATAATCTTAGTGATATGCCTA
TTAATAGTTTTAAATAAATAAATTGGCTTATCTGGCTTTTGAATTTTGAATTTCTTA
CAGATGTTGATTAGGTATATCTACAAATTAATTTCAATTTTAAATGATGATATAAAAT
AAATATAAGTATTTTTCTTGTTATGTATACAATAAATATAAATAAATTTGTTACTGTT
TTGAAAGTTTCTTAAGTTTTTACACTGATATGTTTTTTGACTTTTACAATATTATTATAA

20246 GAAAAATAAAGAGATGCTTGTCTGAAAGTAAGATCAGTGAAGTCTTTTCACTCTCAAT
CTTTGAGAATTGTAAATTCATCAAATAATTGCTTACATAGTAAAAATTTAAGGTATTAGA

FIGURE 3K

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

AAACCTGCATAACAAATAGTATTATATATTAAATATTTTGATATGTAAAGCTCTACACAA
AGCTAAATATAGTGTAATAATGTTTACACTAGTAAGCAAATATGTTAATCTTCTCATTTT
TTTACTGTCATATAATCTTAGTGATATGCCATTAAATAGTTTAAATAAAATAAATTGGCT
[T,C]
ATCTGGCTTTTGGAAAATTTTGAATTTCTTACAGATGTTGATTAGGTATATCTACAAATT
AATTTCAATTTTAAATGATGATATAAAAAATAAATAAGTATTTTCTTGTGTATGTAT
ACAATAAATATAAATAAATTTGTTTACTGTTTGAAGTTTCTTAAGTTTACACTGAT
ATGTTTTTTGACTTTTACAATATTATTATAATCTAGGAAAAGCTGATTATATCTGTTTTA
AGCCTCATCTTTTCTCTGTAATTAAACACAGTAATTTATTAACATGCTGTGACAGGTGGG

20681 TAAATTTGTTTACTGTTTTGAAAGTTTCTTAAGTTTACACTGATATGTTTTTTGACTT
TTACAATATTATTATAATCTAGGAAAAGCTGATTATATCTGTTTTAAGCCTCATCTTTTC
TCTGTAATTAAACACAGTAATTTATTAACATGCTGTGACAGGTGGGAAGCCATTTCTGGA
GTTGAGCCTGCTGACACTCTGGAGCTTTTAGGTTGGACGTTTCATTGTATGTGGGACTCT
CTGCCTCTCGATAGCTGTTGCTCATAAGACTCTCCTTCATCAATCTGGCATGAATTTTG
[C,A]
GATCAGTTGCAATCAGAATCCAATTGGCCTTGCCGTTTTAGTATGTTCTATCTTAACCAG
CAATTTCTAACCAGGAGCCTGCCCAGGTTTGTCTGTCTTCCCTGTAAGAAGCTCCCAGC
ATAAATATTCTAAATTTTACACTACTAATCTATTAACCAACCTTTGGACCATGTTCACTT
TAGGTTGAGCATAGTGTGATGAGATGCAAATTAAATTACAATCCTATAGGTGTGTGTTAT
AAATTTTAAAGTGATAAAATTAAATAACACATTCTAAGTATCCAACAAAGGTCAAAAAAA

20819 AATTTATTAACATGCTGTGACAGGTGGGAAGCCATTTCTGGAGTTGAGCCTGCTGACACT
CTGGAGCTTTTLAGGTTGGACGTTTCATTGTATGTGGGACTCTCTGCCTCTCGATAGCTGT
TGCTCATAAGACTCTCCTTCATCAATCTGGCATTGAATTTGCGATCAGTTGCAATCAGA
ATCCAATTGGCCTTGCCGTTTLAGTATGTTCTATCTTAACCAGCAATTTCTAACCAGGAG
CCTGCCCAGGTTTGTCTGTCTTCCCTGTAAGAAGCTCCCAGCATAAATATTCTAAATTT
[T,C]
ACACTACTAATCTATTAACCAACCTTTGGACCATGTTCACTTTAGGTTGAGCATAGTGTG
ATGAGATGCAAATTAAATTACAATCCTATAGGTGTGTGTTATAAATTTTAAAGTGATAA
ATTAAATAACACATTCTAAGTATCCAACAAAGGTCAAAAAATGATATAAAGTCACCAAA
C

FIGURE 3L